DUNIN-BARKOVSKIY, Igor' Valer'yanovich; YEGOROV, V.A., kand. tekhn. nauk, dots., retsenzent; GUREVICH, S.I., kand. tekhn. nauk, dots., red.; KARGANOV, V.G., inzh., red.; CHERNOVA, Z.I., tekhn. red.

[Piezoelectric profilometers and the measurement of surface roughness] P'ezoprofilometry i izmereniia sherokhovatosti poverkhnosti. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 310 p. (MIRA 14:10)

(Surfaces (Technology))—Measurement)

L 27863-65 EWT(1)/EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(k)/EWP(b) MJW/JD/EM

ACCESSION NR: AT5001357 S/2536/64/000/060/0108/0118

AUTHOR: Gurevich, S.I. (Candidate of technical sciences, Docent); Golikov, V.I. (Candidate of technical sciences); Anisimov, Yu. P. (Engineer)

TITLE: Increasing the efficiency potential of the output gears of steering mechanisms

SOURCE: Moscow. Aviatsionnyy tekhnologicheskiy institut. Trudy, no. 60, 1964. Povysheniye resursa raboty aviatsionnykh detaley tekhnologicheskimi sredstvami (Increasing the efficiency potential of aircraft parts by technological procedures), 108-118

TOPIC TAGS: gear production, aircraft part endurance, steel heat treatment, steel hardness, automatic pilot, gear wear, steering mechanism, wear resistance, steel 18KhGT, steel 38KhMYuA

ABSTRACT: The authors note that in connection with the improved flight characteristics of modern aircraft, a 3000-4000-hour operating potential must be provided for the various assemblies and mechanisms, in particular for the steering mechanisms. The results of static tests of the steering mechanism of serio produced automatic pilots show that, because of heavy wear, the mean lifetime of th gears is only 500 hrs, of 12-17% of the required period. For this reason, the basic pr blem in increasing the operating potential of the steering mechanism is to increase the w r resistance of the rubbing surfaces of

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ACCESSION NR: AT5001357

the gear teeth. The present article discusses the results of work aimed at increasing this potential only for the output gears of the steering mechanism, which are the ones subjected to the heaviest load and whose teeth wear is primarily responsible for the sum play or backlash of the transmission system. The principal object of the investigation was the straight-toothed output spur gears of an autopilot steering mechanism. The basic geometrical parameters of the gear pair are given in a special table. Reasons are adduced explaining why profile wear of the teeth is the primary cause of output gear failure in the autopilot steering mechanism. It is also shown that in the engagement of the pair of gears under consideration, the effective speeds are very low in comparison with profile slippage, attesting to the unfavorable operating conditions in the actual engagement. This leads to increased tooth wear -- a fact confirmed by the results of the experimental investigations carried out in this work. In order to increase the effective service life and wear-resistance of the output gear pair of the steering mechanism, experiments were conducted on the selection of the best type of steel and its most suitable chemical-thermal treatment. These investigations, the preliminary nature of which is stressed by the authors, led to certain recommendations contained in tabular form in the article. The new technical process advanced in the paper for the processing of the teeth is shown to be relatively productive, stable and capable of providing gears having the required accuracy, surface finish and hardness on the lateral working surfaces

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L 27863-65

ACCESSION NR: AT5001357

of the teeth. A complete description is given in the article of how the tests were carried out and the results collated. Among the more important conclusions reached by the authors are the following: 1. Satisfactory wear-resistance in the gears of a steering mechanism, ensuring an operational potential of 2000-3000 hours, is possible if there is an HRS hardness value for the working surfaces of the engaging teeth of 60 or better; 2. The approximate potential of gears manufactured in accordance with the experimental technology discussed in the article can be taken as equal to 1500-2000 hours (2-3 times that of the existing steering mechanism potential); 3. Steering mechanism gears of high load capability and wear-resistance can be produced from types 38KhMYuA and 18KhGT steel, using the chamical-thermal treatment and modern production methods for teeth processing described in this article. Specifically, the initial lateral gap should be reduced to 8-15 angular minutes, and the play in the entire reducer should be within the limits of 13-22 angular minutes. Orig. art. has: 3 tables and 4 figures.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskiy institut (Moscow aeronautical engineering institute)

SUBMITTED: 00 ENCL: 00 SUB CODE: AC, IE

NO REF SOV: 005 OTHER: 000

Card 3/3

L 5006-66 EWT(d)/EWT(m)/EWP(w)/EPF(c)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) IJP(c)

ACC NR: AP5025592 MJW/JD/WB/DJ UR/0129/65/000/010/0019/0022

621.785.53: 295

AUTHOR: Novikova, Ye. N.; Gurevich, S. I.; Nikitina, L. M.

TITLE: Suitability of nitrided VT14 alloy as a gear material

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 10, 1965, 19-22, and top half of insert facing p. 24

TOPIC TAGS: titanium alloy, nitriding, metal friction, wear resistance, transmission gear

ABSTRACT: The VT14 titanium alloy (4.3% Al, 3.22% Mo, and 6% V) in thermally hardened state (water quenching from 860°C and aging at 500°C for 16 hr) displays an ultimate strength of 115 kg/mm^2 and a plasticity of 20%. Like all the other titanium alloys, however, the VT14 displays low antifriction properties, and hence it must be surface-hardened (i.e., in this case, nitrided) before it can be used as the material of friction couplings. The nitriding is performed in a flow of purified N_2 at 850-950°C. Experiments with rollers and gears produced from hot-rolled rods of nitrided VT14 alloy (the hot deformation began at 1050°C -- monophase region -- and ended at 950°C, which corresponded to the $\alpha + \beta$ region) showed that their wear resistance and precision of meshing were satisfactory. The depth of diffusion coating on the gear tooth was 0.08-0.10 mm. Thus, alloy VT14 in nitrided form may be recommended as

Card 1/2

L 3006-66

ACC NR: AP5025592

a gear material. Its use will make it possible to reduce nearly in half the weight of reducing gears and to dispense with labor-consuming anticorrosion measures. Orig. art. has: 1 figure, 2 tables.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM, IE

NO REF SOV: 001 OTHER: 000

Card 2/2 mcd

ACCESSION NR: AR4027695 S/0124/64/000/002/V022/V022

SOURCE: RZh. Mekhanika, Abs. 2V155

AUTHOR: Gurevich, S. G.

TITLE: On investigating in a first approximation the free vibrations of dynamic systems with one degree of freedom and great non-linearities

CITED SOURCE: Izv. Leningr. elektrotekhn. in-ta, vy*p. 48, 1963, 326-332

TOPIC TAGS: first approximation, free vibration, one degree of freedom, great non-linearity, time function

TRANSLATION: The author considers a system whose conduct is described by a differential equation of the form

$$\ddot{x}+\omega^2 x-f(x,\dot{x})=0$$

where x is the parameter characterizing motion, ω is the assigned constant, f $(x, \dot{x})$ is a non-linear function; the dot means differentiation with respect to

Card 1/2

ACCESSION NR: AR4027695

time t. He seeks an approximate solution in the form x = a cos psi, where psi = pt + alpha; p is a certain constant subject to determination; a and alpha are time functions satisfying correlations of the form

$$\dot{a} = A(a), \quad \dot{\psi} = p + B(a)$$

P. V. Myursepp.

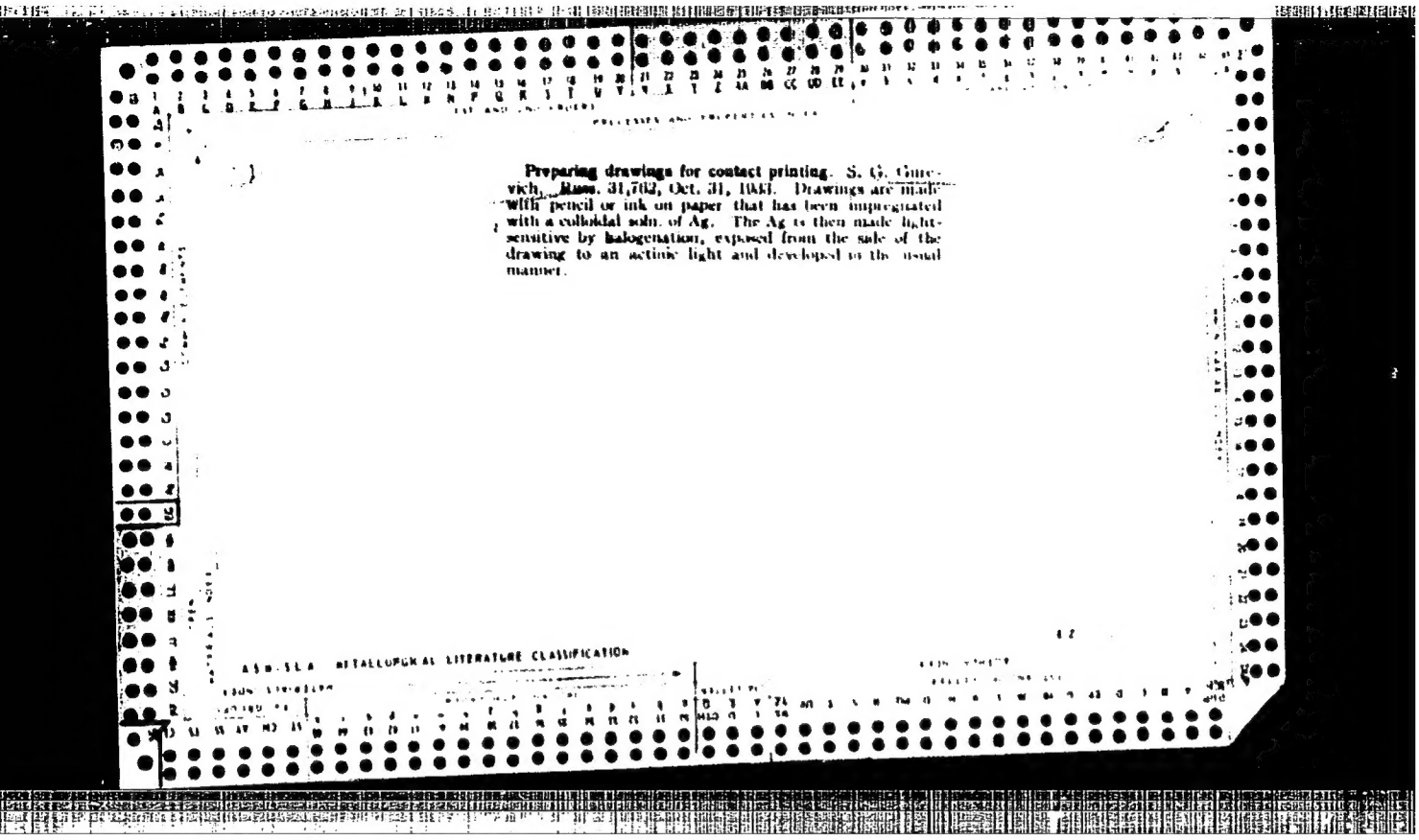
DATE ACQ: 06Mar64 SUB CODE: PH ENCL: 00

Card 2/2

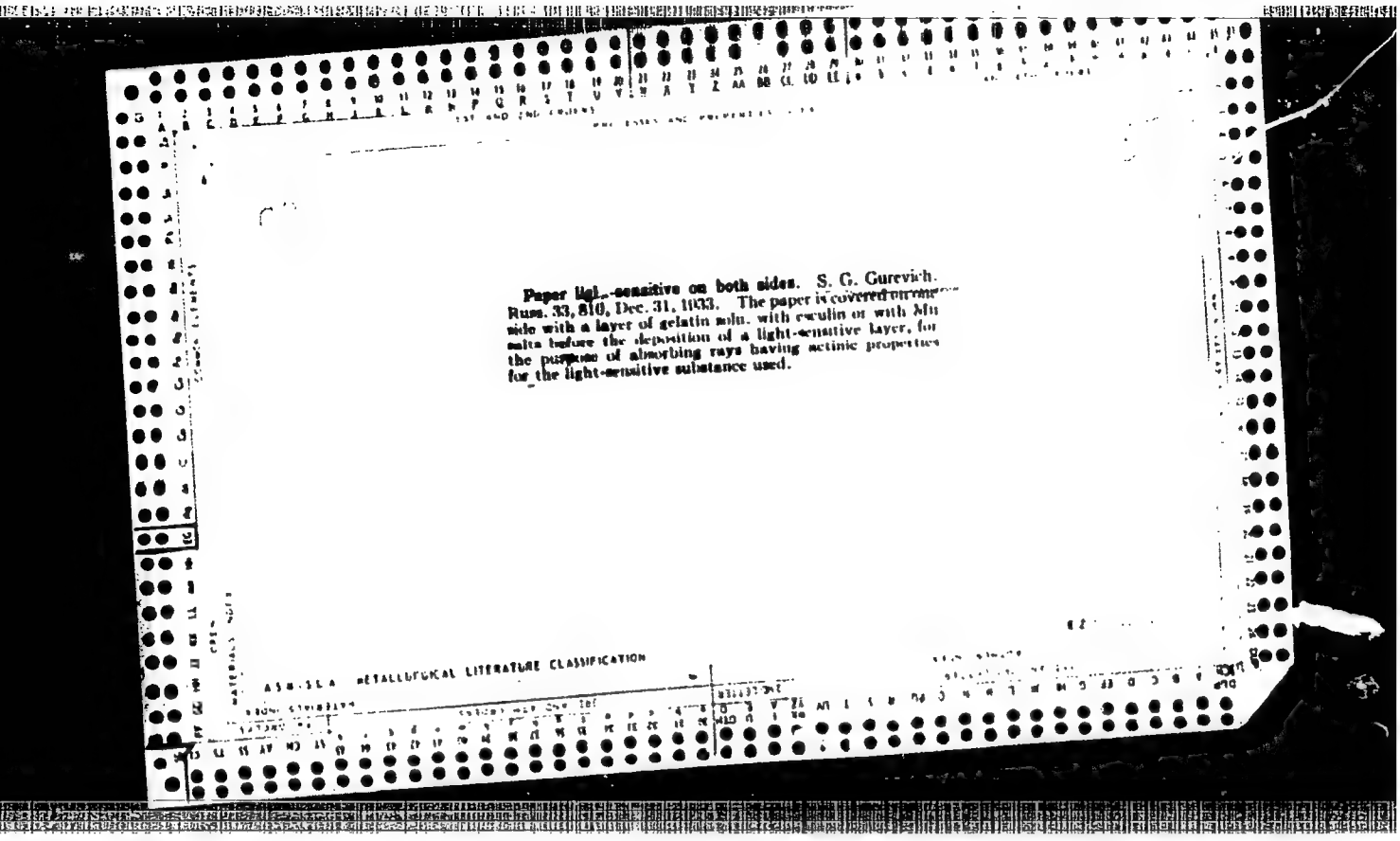
GUREVICH, S.G. (Leningrad)

Using B.G. Galerkin's method for solving linear problems on dynamic systems with distributed parameters. Inzh.sbor. 22:48-52 '55. (MLRA 9:5)

(Dynamics) (Mathematical physics)



Preparing drawings for contact printing. S. G. Gurevich, Russ. 31,702, Oct. 31, 1931. Drawings are made with pencil or ink on paper that has been impregnated with a colloidal soln. of Ag. The Ag is then made light-sensitive by halogenation, exposed from the side of the drawing to an actinic light and developed in the usual manner.



Paper light-sensitive on both sides. S. G. Gurevich. Russ. 33,810, Dec. 31, 1933. The paper is covered on one side with a layer of gelatin soln. with esculin or with Mn salts before the deposition of a light-sensitive layer, for the purpose of absorbing rays having actinic properties for the light-sensitive substance used.

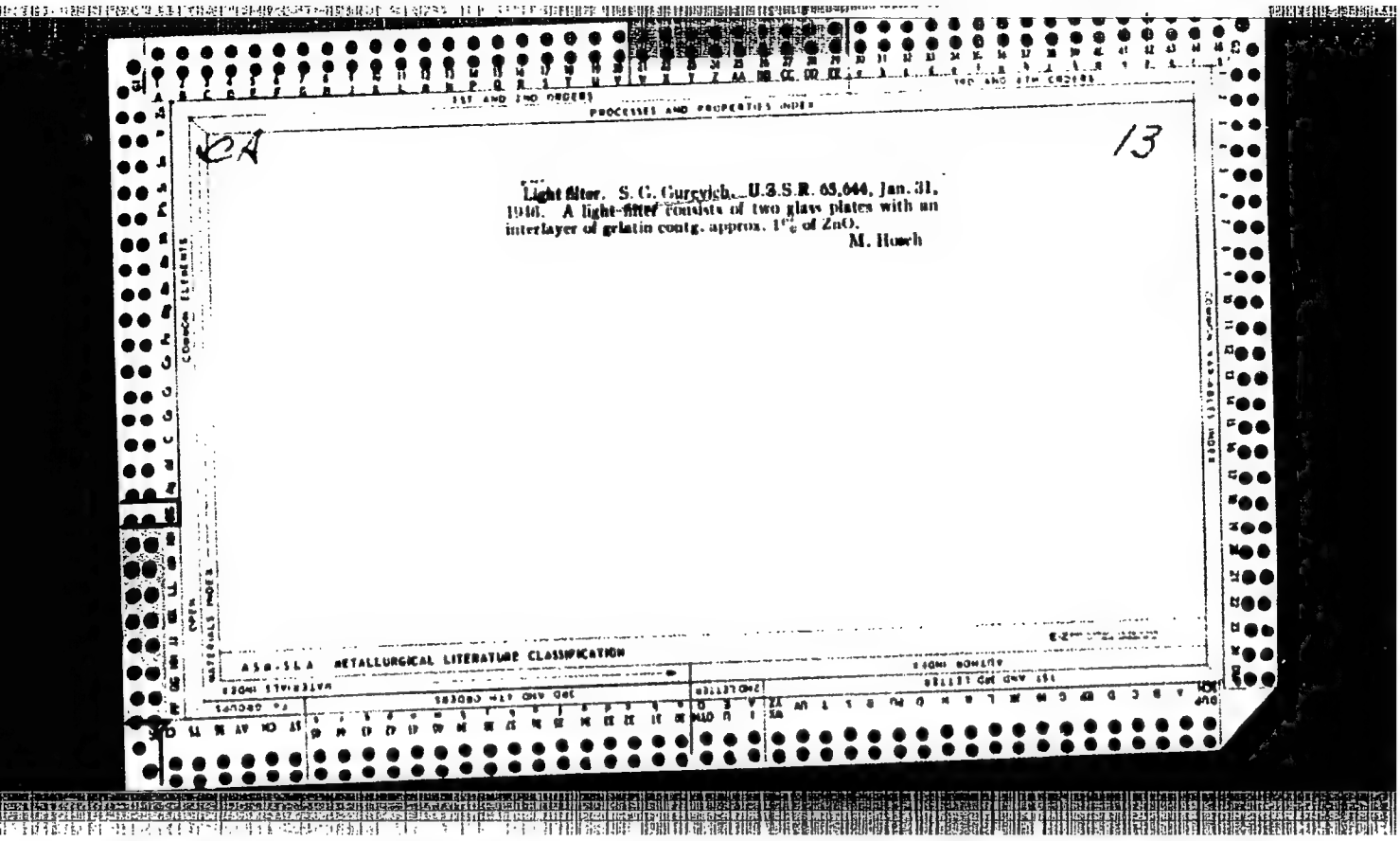
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Determination of chlorides in gelatin S. G. Gurvich. *Sovet. Kino Foto Prom.* 1936, No. 12 [illegible] —A shorter (0.5-1 hr. instead of 3 days) and less complicated volumetric method of detg. chlorides in gelatin is proposed in place of the weighing method. Long filtration and washing of the gelatin is eliminated. The hydrolyzed soln. of gelatin and HNO_3 is titrated by a modified Volhard method to prevent an error of deficiency due to a tendency to the reaction $AgCl + NH_4CNS = AgCNS + NH_4Cl$. The results of both methods are nearly alike, the latter being usually lower. Boiling, filtration and diln. hardly affect the results. How far the weighing method is correct, has not been detd., but great saving of time and material (0.17 g. instead of 2 g. $AgNO_3$) make the volumetric method more economical for production purposes.

W. R. Eichler

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

CA

13

Light filter. S. G. Gurevich. U.S.S.R. 65,644, Jan. 31, 1946. A light-filter consists of two glass plates with an interlayer of gelatin contg. approx. 1% of ZnO.

M. Hoch

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

GUREVICH, S. G.

"Influence of a Diffuse Corona on the Linear Dimensions of a Photographic Picture." Sub 5 Apr 51, Sci Res Cinephotographic Inst (NIKFI)

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

VINOGRADOV, A.A., GUREVICH, S.G., FILIMONOVA, N.V.

Production of acetic acid and acetic anhydride. Khim. nauka i prom. 2 no.1:46-52 '57. (MLRA 10:4)
(Acetic acid) (Acetic anhydride)

BLYUMBERG, I.B.; GUREVICH, S.G.; MATISON, F.S.; NOVATSKAYA, T.A.

More accurate norms for silver recovery. Trudy LIKI no. 5:210-218 '59. (MIRA 13:12)

1. Kafedra obshchey fotografii i tekhnologii obrabotki plenki Leningradskogo instituta kinoinzhenerov.
(Photography--Wastes, Recovery of) (Silver)

89034
S/044/60/000/009/004/021
C111/C222

16.4200
AUTHOR: Gurevich, S.G.

TITLE: On the Construction of Fourier Series With a Strengthened Convergence for Functions Defined in the Given Interval

PERIODICAL: Referativnyy zhurnal. Matematika, 1960, No.9, p.52, Abstract No.10177. Izv. Leningr.elektrotekhn. in-ta, 1959, vyp.37, pp.272-277

TEXT: The author obtains formulas which simplify the expansion of a function (defined in the given interval) into a Fourier series the coefficients of which are small of a high order (A.S.Maliyev, Izv.AN SSSR, 1932, 1437; 1933, 1113).

[Abstracter's note: The above text is a full translation of the original Soviet abstract.]

Card 1/1

GUREVICH, S.G. (Leningrad)

Integral form of the principle of possible displacements and its application to approximate solution of problems in dynamics. Izv. AN SSSR. Otd. tekh.nauk Mekh. i mashinostr. no. 1:58-63 Ja-F '61. (MIRA 14:2)

(Dynamics)

GUREVICH, S.G., kand.fiziko-matematicheskikh nauk, dotsent

Use of Bernoulli polynomials for improving the convergence of trigonometric series according to Krylov's method. Iz. LETI 57 no.39:292-300 '59. (MIRA 15:10)
(Polynomials) (Differential equations)

GUREVICH, S.G., kand. fiziko-matem. nauk, dotsent

Investigation in the first approximation of the natural oscillations of a dynamic system with one degree of freedom at great nonlinearities. Izv. LETI no.48:326-332 '63. (MIRA 17:12)

KRUZHALOV, Boris Dmitriyevich[deceased]; GOLOVANENKO, Boris Ivanovich; Prinimal uchastiye KIVA, V.N.; VINOGRADOV, A.A., red.; GUREVICH, S.G., red.; PANTELEYEVA, L.A., tekhn. red.

[Joint production of phenol and acetone] Sovmestnoe poluchenie fenola i atsetona. Moskva, Goskhimizdat, 1963. 199 p. (MIRA 16:12)

(Phenols) (Acetone)

GUREVICH, S.G., inzh.; PETROVA, V.N., inzh.

New devices for gluing wood with heat in a high-frequency electric field. Der. prom. 13 no.9:2-5 S '64.
(MIRA 17:11)

GUREVICH, S.G. (Leningrad):

"On the approximate solution of some dynamic problems by the use of the Hamilton-Ostrogradsky principle."

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

GUREVICH, S.G.; IL'YASHENKO, G.A.; SVIRIDENKO, S.Kh.; ERLIKH, L.B., prof., retsenzent; FRID, L.I., inzh., red.

[Machinery for the processing of thermoplastic materials] Mashiny dlia pererabotki termoplasticheskikh materialov. Moskva, Mashinostroenie, 1965. 326 p. (MIRA 18:10)

GUREVICH, S.I., kand.tekhn.nauk; GOLIKOV, V.I., kand.tekhn.nauk; ANISIMOV, Yu.P., inzh.

New stand for wearing testing of gear wheels. Trudy MATI no.53: 100-113 '62. (MIRA 15:6)

(Testing machines)

GUREVICH, S.K.

EXCERPTA MEDICA Sec.12 Vol.11/9 Ophthalmology Sept 57

1523. GUREVITCH S.K. Inst. for med.Training, Stalinsk.* Oil of sea buckthorn berries used in ophthalmology (Russian text) VESTN.OFTAL. 1956, 2 (30-33) Tables 1

The berries of the sea buckthorn (Hippophaes rhamnoides) are collected in the second part of winter after their exposure to low temperatures. The buckthorn oil is prepared at a temperature of +60°. The oil is rich in provitamin-A and in biogenic stimulators. Its therapeutic activity is similar to that of cod liver oil. Buckthorn oil is applied in various ways: eye-drops, eye-ointment, intramuscular injection and per os. Often different ways of application are used at the same time. It is given to patients suffering from corneal diseases caused by trachoma, rosacea, morbus Basedow, scrofulosis. It is used also in cases of thermal and chemical burns of cornea and conjunctiva. A review is given of 101 patients treated with this medicament. Most eyes clearly improved. In patients who had vit. A deficiency buckthorn-oil restored the vit. A level to the norm. As a result, dark adaptation improved. Buckthorn-oil therapy is considered as a form of tissue therapy.

De Haas - Arnhem

GUREVICH, S.L.; STOROZHENKO, Yu. I.

Organization of dispatching services in shoe factories.
Kozh.-obuv.prom. 6 no.3:13-17 Mr '64. (MIRA 17:4)

GUREVICH, S.L.; KHLEBNIKOV, S.P.

Centralized memorizing system for dispatching operations. Kozh.-obuv. prom. 6 no.4:14-17 Ap'64. (MIRA 17:5)

GURKEVICH, S.L., inzhener; DOVGER, F.F., inzhener.

Standard, prefabricated temporary buildings for the construction of steam-driven electric power plants. Elek. sta. 25 no.6:25-28 Je '54. (MLRA 7:7)
(Buildings, Prefabricated)

GUREVICH, S.L., inzhener; LIKHTENSHTEYN, L.G., inzhener.

Cost indexes of thermal electric power plant construction. Elek. sta. 25 no.9:18-21 S '54. (MLRA 7:9)
(Electric power plants--Cost of construction)

GUREVICH, S.L., inzhener; RUMANOV, A.Z., inzhener.

Use of a soil-throwing machine for the mechanization of backfilling work. Elek.sta. 25 no. 8:26-30 Ag '54. (MLRA 7:9)
(Excavating machinery)

GUREVICH, S.L., inzhener; LIKHTENSHTEYN, L.G., inzhener.

Lowering the cost of constructing thermal power plants. Elek.sta. 27 no.5:21-25 My '56. (MLRA 9:8)
(Steam power plants)

GUREVICH, S.L., inzh.; ROGOVIN, N.A., inzh.

Conference of heat-engineering organizations of the Ministry of Electric Power Plants. Elek.sta. 29 no.11:92-94 N '58.
(MIRA 11:12)

(Heat engineering—Congresses)

GUREVICH, S.L., inzh.; ROGOVIN, N.A., inzh.; KUDRYASHOV, S.A., inzh.

Layout of the construction site of large state-owned regional electric power plants. Elek.sta. 29 no.11:88-89 N '58. (MIRA 11:12)

(Electric power plants)

MONAKHOV, N.I., inzh., glavnyy red.; TURIANSKIY, M.A., inzh., zam. glavnogo red.; GURKVICH, S.L., inzh., red.sbornika; KHAVIN, B.N., red.izd-va; MEDVEDEV, L.Ya., tekhn.red.; RUDAKOVA, N.I., tekhn.red.

[Collection no.5 of consolidated cost indexes for buildings and structures of electric power plants and electric and heating networks for the re-evaluation of capital assets] Sbornik No.5 ukrupnennykh pokazatelei stoimosti zdanii i sooruzhenii elektricheskikh stantsii, elektricheskikh i teplovykh setei dlia pereotsenki osnovnykh fondov. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1959. 127 p.

(MIRA 13:11)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.
(Electric power plants) (Power engineering)

GUREVICH, S.L.; STOROZHENKO, Yu.T.; KHNIS, A.B.

Programming system with punched tape for the control of continuous worm apparatus. Kozh.-obuv. prom. 7 no.9:13-16 S '65.
(MIRA 18:9)

GREKOV, Vasiliy Ivanovich SMIRNOV,S.M.,doktor tekhn.nauk,retsenzent
GUREVICH,S.L.,inzh.,retsenzent; PLEMYANNIKOV,M.N.,red.
[Automation of production processes in light industry enterprises] Avtomatizatsiia tekhnologicheskikh protsessov na predpriiatiiakh legkoi promyshlennosti. Moskva, Legkaia industriia, 1965. 322 p. (MIRA 18:10)

GUREVICH, S.M., podpolkovnik meditsinskoy sluzhby

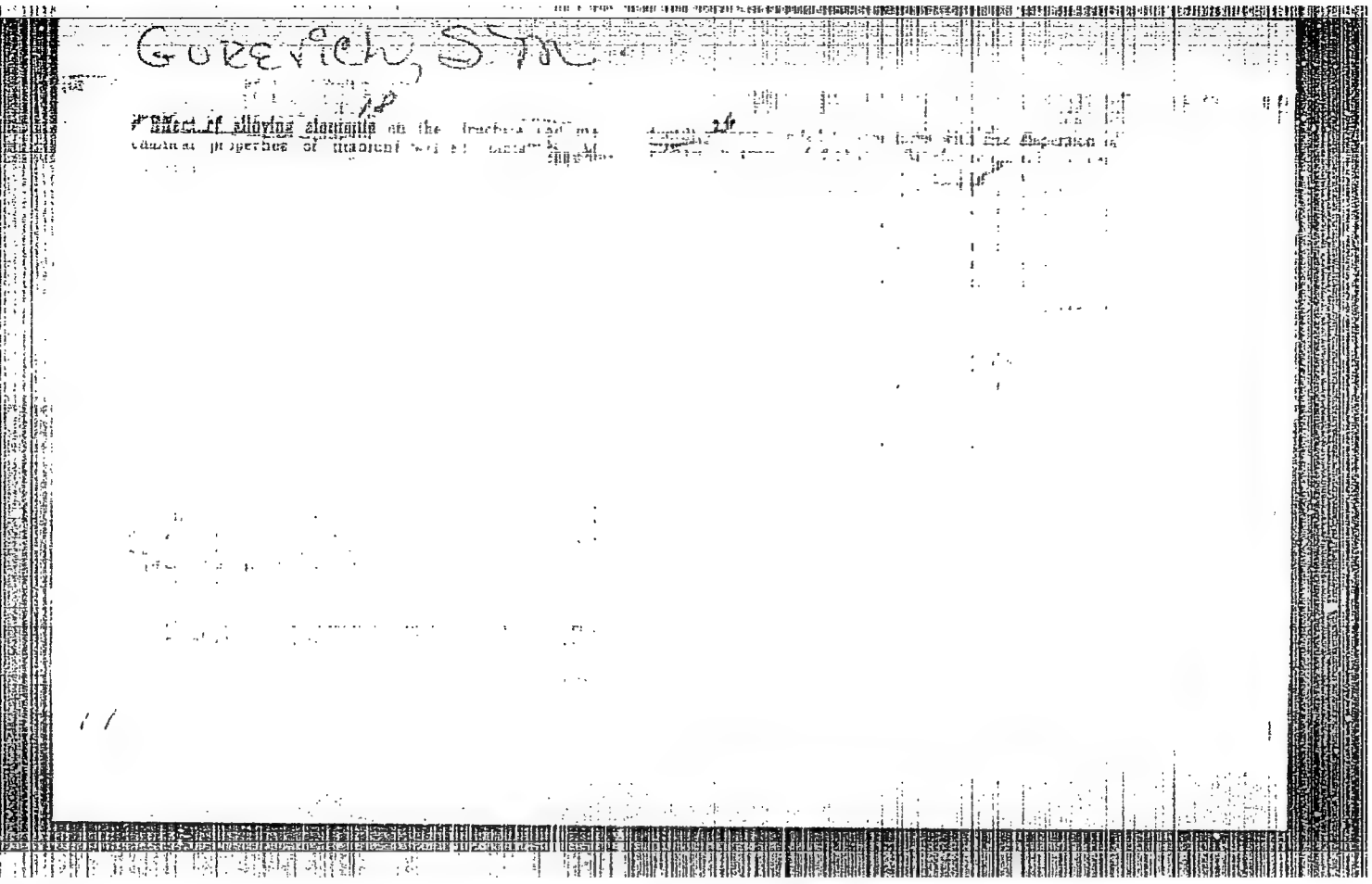
Sanitation of water sources in military districts. Voen.-med.zhur. no.9:68-71 S '56. (MLRA 10:3)

(RUSSIA--ARMY--SANITARY AFFAIRS)
(WATER SUPPLY)

SIMONTOVSKIY, V.P., polkovnik med. sluzhby; GUREVICH, S.M., podpolkovnik med. sluzhby.

Organizing the work of a methodological health education center. Voen.med.zhur. no.9:66-70 S '57. (MIRA 11:3)

(HEALTH EDUCATION, military in Russia (Rus)
(MEDICINE, MILITARY AND NAVAL, health educ. (Rus)



Goodrich, S Inc

Effect of alloying elements on the fracture [illegible]
[illegible] properties of titanium [illegible]

GuRevich, S.M.

Scientific
Minerals/Metals (Contd)

Selected Articles From the French Periodical Revue Metallur [illegible] Scientifique. (Contd)

Vol LVIII, Jun 1961, pp [illegible]-813. Surface Tension of Liquid Iron and Its Alloys. Part I, by P. [illegible], G. Urbain.	BLSI 2609
Vol LVIII, Jul 1961, pp [illegible]. The Direct Analysis of Sulphur, Phosphorous, Carbon and Silicon in Steels by Emission Spectrometry in the Far Ultra-Violet, by J. [illegible], C. Brenet, R. Bernerom.	*BISI 2602
Vol LVIII, Dec 1961, pp [illegible]. Contribution to the Study of the Effect of Nickel (up to 9%) on the Mechanical Properties of Steels at Low Temperature, by H. Krom, et al.	*BISI 2690
Problems of Welding Titanium and Other Chemically Active Metals, by S. M. Gurevich. 14 pp. GERMAN, rpt, Fragen des Schweissens von Titan und Anderer Chemisch Aktiver Metalle, Presented at the 2nd International Colloquium on Weldability & [illegible] Metallurgy Held at [illegible], Germany, 2-3 Mar 1961, 15 pp. [illegible]	FTD-TT-61-251
Determination of Twin Stacking Fault Density in Cubic Phase Centred Metals, by H. Wilkens. GERMAN, per, Acta Crystallographica, Vol XV, Part 2, 10 Feb 1962, pp 161-166.	*BISI 2684
The Importance of Dislocations at the Crystal Boundaries of Tempered Martensite for the Mechanism of 'Temper Brittleness', by A. [illegible]. GERMAN, per, Acta Metallurgica, Vol VII, Mar 1959, pp [illegible].	*BISI 2655

SOURCE: CONSOLIDATED TRANSLATION SURVEY, No. 51, March 1962, prepared by Foreign Documents Division, CIA. UNCLASSIFIED.

L 44574-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6015701 (A) SOURCE CODE: UR/0413/66/000/009/0101/0101

35
B

INVENTOR: Galkin, L. A.; Gurevich, S. M.

ORG: none

TITLE: Method of chromatographic analysis of gas mixtures. Class 42, No. 181375

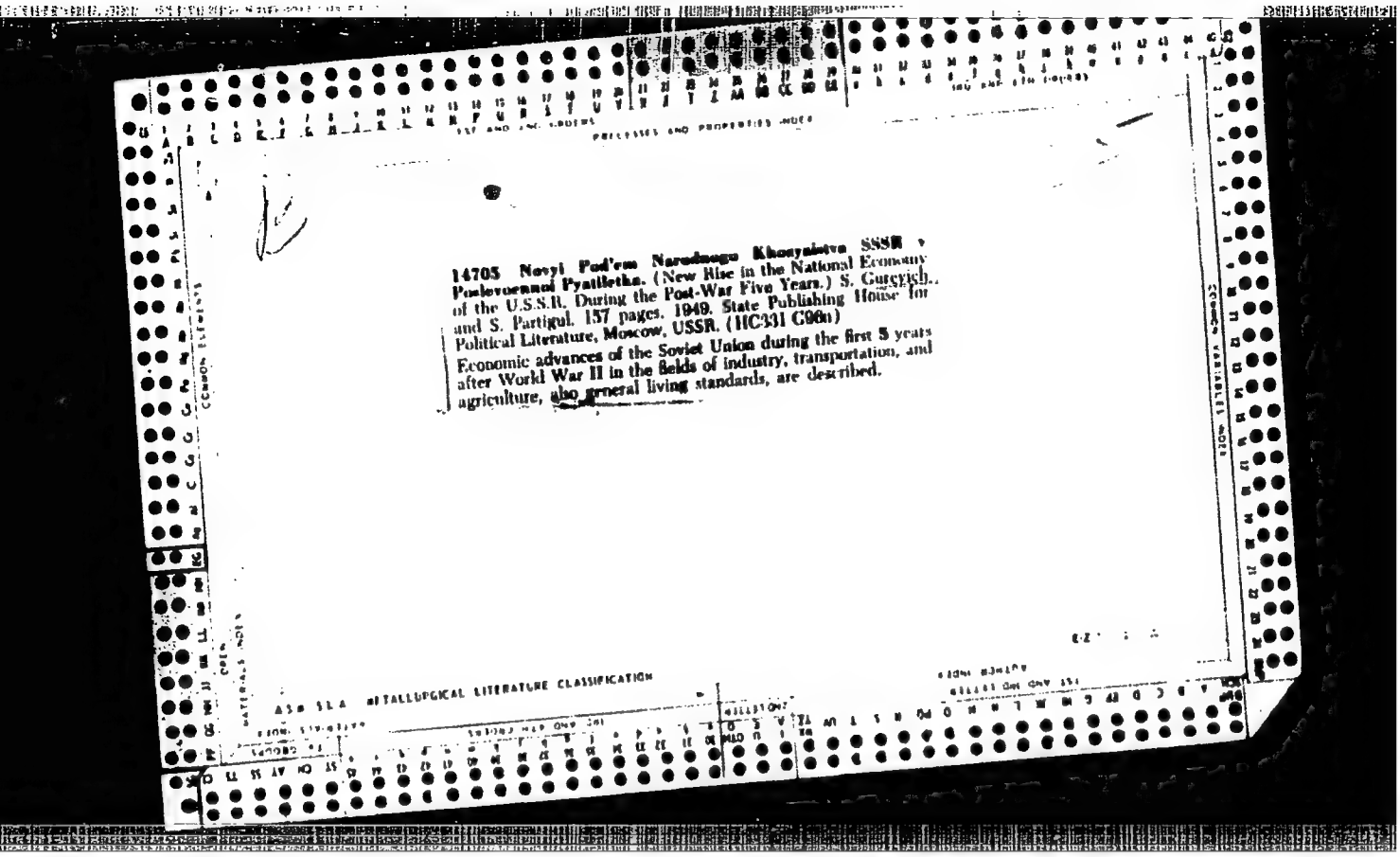
SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, 101

TOPIC TAGS: chromatographic analysis, argon, oxygen, molecular sieve, gas carrier

ABSTRACT: An Author Certificate has been issued for a method of chromatographic analysis of gas mixtures containing argon and other low-boiling gases in the presence of oxygen. The gas mixture to be analyzed is separated in a chromatographic column and filled with molecular sieves in the gas-carrier flow, with subsequent rectification of the separated mixture components at the outlet of the column. To shorten the time required for analysis and to increase its accuracy, oxygen is used as a gas carrier. [Translation] [NT]

SUB CODE: 07/ SUBM DATE: 21Apr65/

Card 1/1 UDC: 543.544.25



14705 **Novyi Pod'em Narodnogo Khozyaistva SSSR v Poslevoennoi Pyatiletke.** (New Rise in the National Economy of the U.S.S.R. During the Post-War Five Years.) S. Gurevich, and S. Partigul. 157 pages. 1949. State Publishing House for Political Literature, Moscow, USSR. (HC331 G98n)

Economic advances of the Soviet Union during the first 5 years after World War II in the fields of industry, transportation, and agriculture, also general living standards, are described.

GUREVICH, S.; MALYY, I.

New textbook on statistics ("Statistics." Reviewed by S. Gurevich, I. Malyi). Vop.ekon. no.2:127-133 F '57. (MLRA 10:5)
(Statistics)

GUREVICH, S.

2-5-3/11

AUTHOR: Volodarskiy, L., and Gurevich, S.

TITLE: The Historical Victories of Socialist Economy (Istoricheskiye pobedy sotsialisticheskoy ekonomiki)

PERIODICAL: Vestnik Statistiki, 1957, # 5, p 21-39 (USSR)

ABSTRACT: The authors give a survey on the Soviet economical development from 1917 until now.

Referring to the social structure of the USSR, the authors present statistical data showing the complete destruction of all exploiting classes.

Regarding the industrial development, the authors state that during the fifth Five-Year Plan (from 1951-1955) the average rate of production increase per year was 13.2 % in industrial gross production. Similar statistical data are given regarding the manufacture of means of production, of consumer goods, of the growth in metals, coal, oil, and cement production. The authors point out the trend to move Soviet heavy industry eastward, to the Urals, Siberia, Central-Asia and Kazakhstan. Further data are given to illustrate the Soviet progress in machine-tool construction, in the production of different instruments and automation means.

Relating to agriculture, statistical figures are given to

Card 1/2

illustrate the production increase of basic foodstuffs and the development of agricultural mechanization. The cultivation of virgin and waste lands (altogether 36 million ha) in Kazakhstan, in the Urals and in Siberia is said to have been a big economical success.

The article contains also statistical figures showing the improved living standard of the Soviet population, the better conditions of work, the achievements in house-building. Other data refer to public education and the enormous output of technical experts.

AVAILABLE: Library of Congress

Gurevich, S.

2-58-4-3/14

AUTHOR: Gurevich, S.

TITLE: V.I. Lenin on the Analysis of Statistical Data (V.I. Lenin ob analyze statisticheskikh materialov)

PERIODICAL: Vestnik Statistiki, 1958, Nr 4, pp 20-33

ABSTRACT: The article stresses the importance which Lenin always attached to the role of statistics in socialist planning and gives examples of the use of statistics in his work.

AVAILABLE: Library of Congress

Card 1/1

GUREVICH, S.M., red.; PYATAKOVA, N.D., tekhn.red.

[Use of mathematics in economic research and its relation to econometrics; materials of a conference called by the editors of the journal "Vestnik statistiki"] O primenenii matematiki v ekonomicheskikh issledovaniiakh i ob otnoshenii k ekonometrike; materialy soveshchaniia, sozvannogo redaktsiei zhurnala "Vestnik statistiki". Moskva, Gos.stat.izd-vo, 1959. 45 p. (MIRA 13:1)

1. Russia (1923- U.S.S.R.) TSentral'noye statisticheskoye upravleniye.

(Economics, Mathematical)

GUREVICH, Semen Maksimovich

The new economic upswing of the U.S.S.R. in the post-war five-year plan period (by) S. Gurevich and S. Partigul. Moscow, Foreign Language Pub. House, 1950.
256 p. 17 cm.

PETROV, A.I., prof.; LESHCHINSKIY, M.I., kand. ekon. nauk; MAKSIMOVA, V.N., dotsent; MALYY, I.G., dotsent; MOSKVIN, P.M., dotsent; TITEL'BAUM, N.P., dotsent; URINSON, M.S., dotsent; EYDEL'MAN, M.R., kand. ekon. nauk; GUREVICH, S.M., red.; GRYAZNOV, V.I., red.; PYATAKOVA, N.D., tekhn. red.

[Course in economic statistics] Kurs ekonomicheskoi statistiki. Izd.3., dop. i perer. Moskva, Gosstatizdat TsSU SSSR, 1961. 507 p. (MIRA 14:6)

(Statistics)

GUREVICH, S. M.

27755

Otsenka Sklonnosti Svarnykh Shvov K Obrazovaniyu Goryachikh Treshchin. Trudy Po Avtomat. Svarke Pod Flyusom (in-ti Elektrosvarki Im. Patona) sb. 7, 1949, s. 47-54

SO: Letopis' Zhurnal'nykh Statey, Vol. 37, 1949

GUREVICH, S.M.; GRISHCHENKO, V.M.

Automatic welding of thin chrome-manganese-silicon steel sheets. (MLRA 7:11)
Avtom.svar. 6 no.5:38-52 S-O '53.

1. Institut elektrosvarki im. Ye.O.Patona Akademii nauk USSR.
(Steel--Welding)

GUREVICH, S.M.

Determining the size of austenite grain in the border zone of a seam. (MLRA 8:4)
Avtom.svar. 6 no.6:60-64 N-D '53.

1. Institut elktrosvarki im. Ye.O.Patona Akademii nauk URSR.
(Steel--Welding)

A method for revealing austenitic grains in the weld decay zone of medium carbon and alloy steels. S. M. Gurevich and A. A. Kosto-hinskii. *Avtomat. Svarka* 7, No. 1 ([illegible] 31), 48-51(1954).—A method is described for [illegible] electrolytic etching of samples with welds for the [illegible] [illegible] out the austenitic grain structure in [illegible] weld decay zone. An aq. soln. of $(NH_4)_2SO_4$ is used as [illegible] electrolyte. The entire transition zone of austenitic [illegible] [illegible] revealed in the weld [illegible] alloy and medium carbon [illegible] [illegible] exposed to the [illegible] [illegible] [illegible]

J. R. [illegible]

Inst. Electric Welding im Ye. O. Paton, Acad Sci UKR SSR

GUREVICH, S.M.

Evaluating the welding properties of alloy steel according to data of thermokinetic curves. Avtom.svar. 7 no.1:78-81 Ja-F '54. (MLRA 7:7)

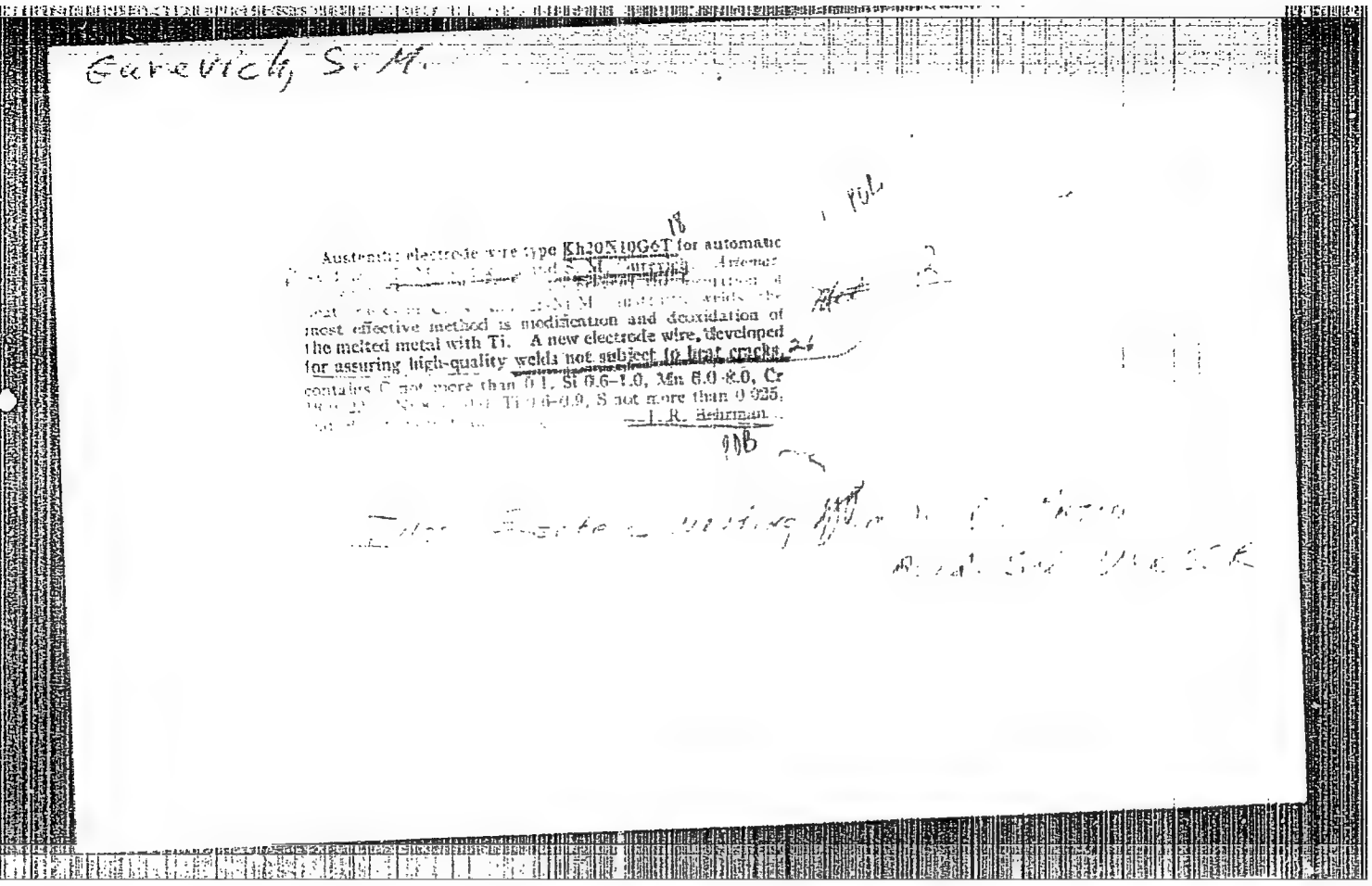
1. Institut elektrosvarki im. Ye.O.Patona Akademii nauk USSR.
(Steel alloys)

GURKVICH, S.M.

New research work of Czechoslovak welders. Avtom.svar. 7 no.3: 82-84 My-Je '54. (MLRA 7:7)
(Czechoslovakia--Welding research) (Welding research--Czechoslovakia)

GUREVICH, S.M.

Effect of hydrogen on the formation of cracks in the zone around a seam of low-alloy steel. Avtom. svar. 7 no.6(39):81-85 N-D '54. (MLRA 8:2)
(Welding)(Hydrogen)



Austenitic electrode wire type Kh20N10G6T for automatic
[illegible] most effective method is modification and deoxidation of the melted metal with Ti. A new electrode wire, developed for assuring high-quality welds not subject to heat cracks, contains C not more than 0.1, Si 0.6–1.0, Mn 6.0–8.0, Cr [illegible] Ti 0.6–0.9, S not more than 0.025.

—I. R. Rehrman

GUREVICH, S.M

USSR/ Engineering - Welding

Card 1/1 Pub. 11 - 8/8

Authors : Gurevich, S. M.

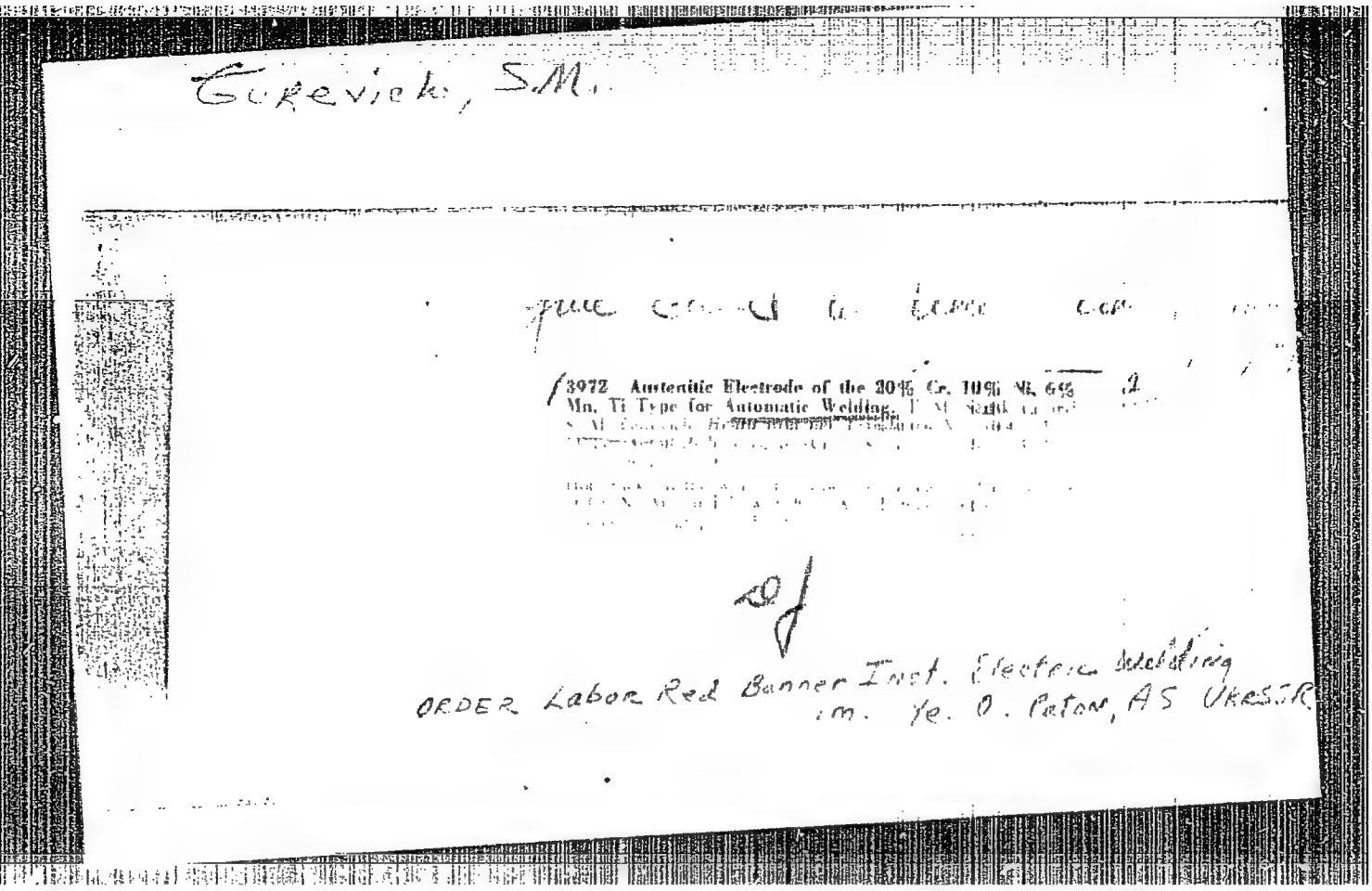
Title : Welding of titanium and its alloys (Review of foreign literature)

Periodical : Avtom. svar. 8/1. 74-90, Jan-Feb 1955

Abstract : A review is presented of foreign technical literature published during the past 5 years, dealing with methods of titanium production, structure of titanium and its alloys, chemical composition and mechanical properties of some titanium alloys, and the electric arc, spot, and butt welding of titanium. Thirty-eight references: 2 USSR, 1 French and 35 USA (1941-1954). Illustrations; graphs; tables.

Institution : .....

Submitted : November 15, 1954

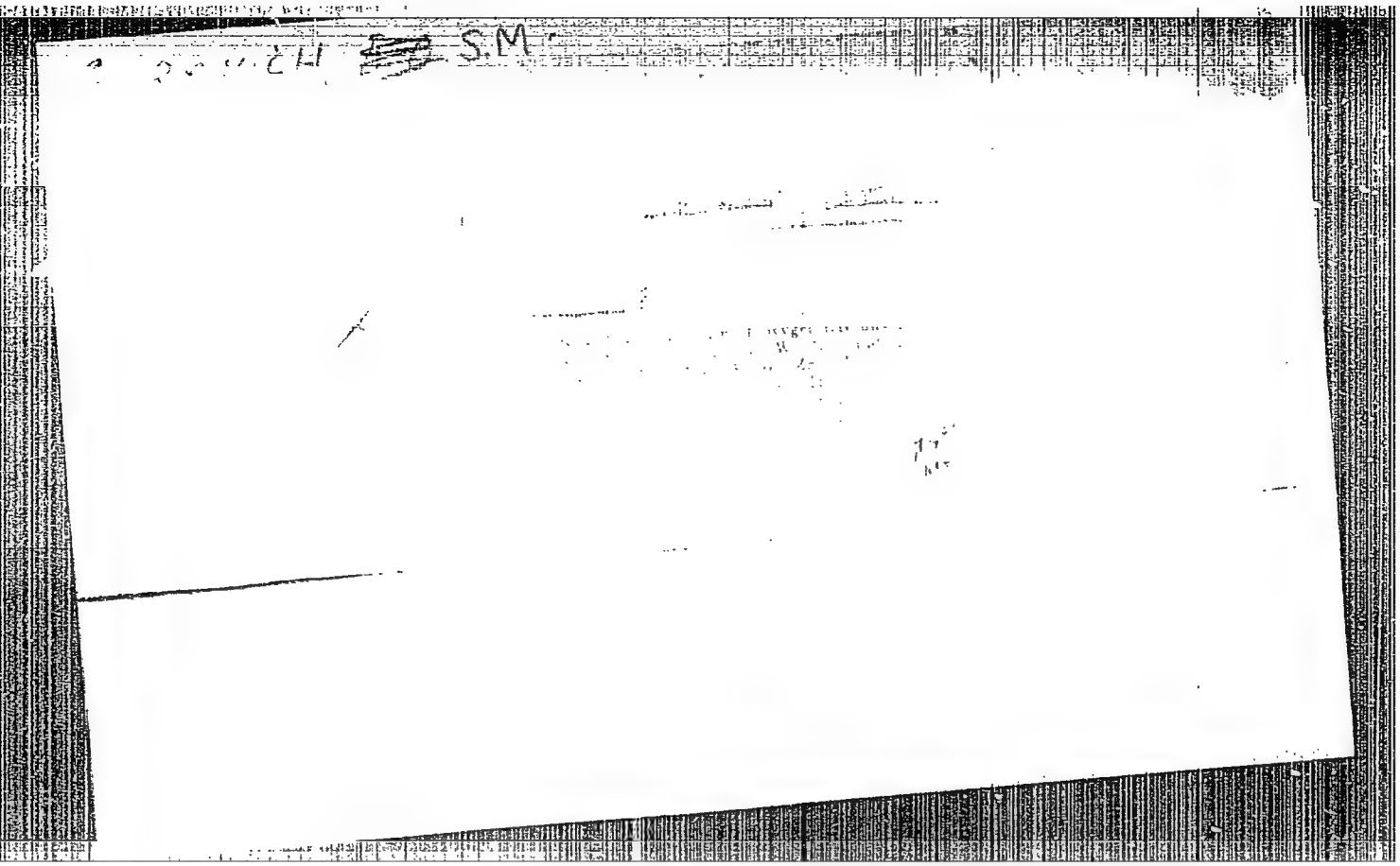


Gurevich, S.M.

3972 Austenitic Electrode of the 20% Cr, 10% Ni, 6% Mn, Ti Type for Automatic Welding.

29

ORDER Labor Red Banner Inst. Electric Welding im. Ye. O. Paton, AS UkrSSR



AID P - 4505

Subject : USSR/Engineering

Card 1/2 Pub. 11 - 3/12

Author : Gurevich, S. M.

Title : Welding Effects on Adjacent-to-Seam Area of Commercially Pure Titanium.

Periodical : Avtom. svar., 2, 18-21, Mr/Ap 1956

Abstract : Referring to the article on "Properties and Structure of Titanium After 30-min. Heating at 1,200 to 2,000°F." by E. Walden and L. A. Dixon ("Metal Progress", v. 64, No. 2, 1953), the author describes two series of experiments conducted to verify the assumption made there. The deductions are drawn that in welding of commercial titanium there occurs a distinct growth of its grain, and that the excessive grain growth in the adjacent-to-seam area of titanium leads to a diminishing of the strength and plasticity of junctions. One diagram, table and photos of 3 microstructures. 1 Russian reference (1955), 3 Foreign (USA) (1953-1954).

Avtom. svar., 2, 18-21, Mr/Ap 1956 AID P - 4505

Card 2/2 Pub. 11 - 3/12

Institution : Institute of Electrowelding im. Paton

Submitted : Ja 10, 1955

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617420013-7"

AID P - 5411

Subject : USSR/Engineering

Card 1/2 Pub. 11 - 1/13

Authors : Gurevich, S. M., and S. V. Mishchenko

Title : Automatic electric arc welding of titanium

Periodical : Avtom. svar., 5, 1-12, My 1956

Abstract : The authors discuss the most important properties of commercial titanium affecting its welding. They describe titanium welding in inert gas atmosphere by non-melting electrode, and the automatic titanium welding with specially developed flux available from the Electrowelding Institute im. Paton. Some data on the structure and mechanical properties of welded specimens are given. Five tables, 8 micro-pictures, 2 graphs; 10 foreign-references (1948-56) and 5 Russian references (1952-56).

AID P - 5411

Avtom. svar., 5, 1-12, My 1956

Card 2/2 Pub. 11 - 1/13

Institution : As above

Submitted : 26 Je 1956

AUTHOR: Gurevich, S.M., Candidate of Technical Sciences.

TITLE: Brittleness of weld seams in titanium caused by hydrogen. (Khrupkost' svarnykh shvov titana,, vyzvannaya vodorodom).

PERIODICAL: "Metallovedenie i Obrabotka Metallov" (Metallurgy and Metal Treatment), 1957, No.6, pp.47-50 (U.S.S.R.)

ABSTRACT: The mechanical properties of weld seams in commercial titanium containing 0.01 to 0.05% H and of the influence on the hydrogen caused brittleness of the seams of some alloying elements which stabilise the α or the β-phase are studied. Welds produced in a single process by means of AH-T1 melting electrodes under flux were investigated. The base metal consisted of commerical magnesium-thermal titanium sheets 3 mm thick produced in an electric arc vacuum furnace. Introduction of various quantities of hydrogen into the metal of the seam was achieved by using experimental titanium electrode wires of 2 to 2.5 mm dia. with various hydrogen contents. The seam metal contained 0.039 to 0.045% N and 0.164 to 0.175% O. The results of the mechanical tests are plotted in Fig.1, p.48; the influence of H on the mechanical properties of titanium weld seams containing 4% aluminium are given in Fig.2, p.49, whilst Fig.3 gives the influence

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Brittleness of weld seams in titanium caused by hydrogen. (Cont.)

of various alloying elements (Mo, Fe, Cu, Al, Sn, Mn) on the impact strength of the weld seam for a hydrogen content of 0.05%. An increase of the hydrogen content in the metal seam within the range of 0.01 to 0.05% brings about a sharp decrease of the impact strength; from an H content of 0.03% onwards the strength increases somewhat, whilst the ductility decreases; up to a content of 0.05% H no cold cracks were observed. Seam metal alloyed with aluminium has a strong tendency to formation of cold cracks if the H content is increased to 0.05%. Introduction into the seam of elements conserving the single phase structure of the titanium (i.e. aluminium, tin) did not eliminate its sensitivity to hydrogen caused brittleness. The stability of the seam metal against the embrittling action can be improved by alloying the seam with elements stabilising the β-phase and in this respect addition of Mo is favourable, since Mo is one of the most intensive stabilisers of the β-phase which also eliminates the acicular structure. 4 figures, 11 references, 3 of which are Slavic.

ASSOCIATION: Institute of Electric Welding Ac.Sc. Ukraine imeni Ye. O. Paton, (Institut Elektrosvarki AN USSR imeni Ye. O. Patona).

AVAILABLE:

GUREVICH, S.M.

5 (4629)

40868* (Russian.) Effect of Hydrogen on Formation of Cracks and on the Mechanical Properties of Titanium Welded Joints. K voprosu o vliianii vodoroda na sklonnost' k treshchinam i mekhanicheskie svoistva svarnykh soedinenii titana. S. M. Gurevich. *Avtomaticheskaia Svarka*, v. 10, Jan.-Feb. 1957, p. 9-18.

Even 0.05% H content in welded joints of pure Ti decreases resilience, slightly increases the strength, and lowers plasticity. The brittleness produced by H is eliminated by introducing into the joint elements such as Mo, thus stabilizing the βTi phase.

Order Labor Red Banner Inst. Electric Welding im Ye. O. Paton
AS Ukr SSR

Gurevich, S. M.

Distr: 4E2c/4E4j

Electric welding of titanium under oleg. S. M. Gurevich and V. P. Dickovskii. *Avtomat. Svarka* 10, No. 3, 85-91 (1957).—For the successful welding of tech. Ti, particularly with large cross sections, O-free fluxes in A atm. are required. The grain size of the seam increases with the elec. energy, in proposition to its length. For quality welding, low energy should be applied. 10 references. E. B.

4
2

GUREVICH, S.M.

GUREVICH, S.M.

Some peculiarities in welding titanium under flux. Avtom. svar. 10 no.5:38-48 S-O '57. (MIRA 10:12)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. akad. Ye.O. Patona AN USSR.
(Titanium--Welding) (Electric welding)

GUREVICH, S. M.,

"The Effect of Aluminum on the Structure and Properties of Titanium Welded Joints," Titan i yego splavy; metallurgiya i metallovedeniye (Titanium and Its Alloys; Metallurgy and Physical Metallurgy), Moscow, Izd-vo AN SSSR, 1958. 205.

Institute of Electric Welding, Ukrainian Academy of Sciences.

GUREVICH, S.M.

AB-I

PHASE II - ABSTRACTS

18(2)

Akademiya nauk SSSR. Institut metallurgii

Titan i yego splavy; metallurgiya i metallovedeniye (Titanium and Its Alloys; Metallurgy and Physical Metallurgy) Moscow, Izd-vo AN SSSR, 1958. 209 p. 4,000 copies printed.

Resp. Ed.: N.V. Ageyev, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: V.S. Rakhmankov; Tech. Ed.: A.A. Kiseleva.

INTRODUCTION: This book, of which a Phase I Exploitation (SOV/1200) has been prepared, is a collection of scientific papers devoted to the study of titanium and its alloys from three main points of view: physical metallurgy, forming, and welding. Special problems investigated include structural changes occurring during welding, determination of the content of harmful gases, development of industrial methods of rolling, and oxidation at various temperatures.

PART I. PHYSICAL METALLURGY

Card 1/93

Titanium and Its Alloys (Cont.)

the ductility of the weld metal. (6) VT-1D titanium shows little tendency to form cracks at high temperatures. Such a tendency at room temperature and below depends on the ductility of the original metal. Sheets of high ductility do not form such cracks. (7) VT-1D titanium can be soldered with pure silver in a furnace with an atmosphere of pure helium (in special chambers) or by heating in an electrical resistance machine. There are 5 tables, 1 figure, and 6 references (all English).

Gurevich, S.M. (Institute of Electric Welding, Ukrainian Academy of Sciences) The Effect of Aluminum on the Structure and Properties of Titanium Welded Joints 205

An investigation was made of the effect of the various amounts of aluminum (from 1 percent to 7 percent) on the structure and mechanical properties of welded titanium joints produced by means of a melting electrode. The base metal consists of plates of Mg-reduced titanium 3 mm in thickness. The weld metal was alloyed with aluminum in amounts of 1, 3, 5, and 7 percent by making automatic butt welds with the use of aluminum wires of various diameters. For purposes of comparison, similar welds were made without aluminum. Conclusions. (1) Alloying of titanium welded joints with

Card 42/43

aluminum in amounts up to 5 percent increases the hardness of the weld metal without appreciably lowering ductility and impact toughness. (2) Increasing the amount of aluminum beyond 5 percent results in a coarse acicular structure and a sharp decrease in ductility. There are 2 figures and 7 references (2 Soviet, 4 English, and 1 German).

AVAILABLE: Library of Congress

GO/sfm
6-18-59

Card 43/43

129-58-8-3/16

AUTHOR: Gurevich, S. M., Candidate of Technical Science

TITLE: Structure and Mechanical Properties of Welded Alloyed Joints of Titanium (Struktura i mekhanicheskiye svoystva svarnykh legirovannykh shvov titana)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 8, pp 18-21 + 1 plate (USSR)

ABSTRACT: Little work has been published on the influence of alloying elements on the structure and the mechanical properties of titanium weld joints. In view of the fact that welding is very attractive for titanium alloys in the case of sheet thicknesses of over 2 to 3 mm, the authors investigated the structure and the mechanical properties of weld seams of titanium, alloyed with various admixtures, in quantities up to 7%. As admixtures, elements were chosen which are currently used in titanium base alloys (aluminium, tin, vanadium, molybdenum, manganese, iron and copper). For investigating the micro-structure and testing the mechanical properties of the seams, 3 mm thick plates of commercial titanium VT-1D were butt welded with electrodes of the same grade under the flux AN-T1. For alloying the metal of the weld, the method of automatic

Card 1/4

Structure and Mechanical Properties of Welded Alloyed Joints of Titanium

welding was used applying admixture rods of various diameters and materials (aluminium, tin, molybdenum, iron and copper) and also pouring into the weld a dosed quantity of metallic powder (Cr, Mn and V). The concentration of the admixtures (1, 2, 3, 5 and 7%) was so chosen as to obtain a single (α) phase or a two-phase ($\alpha + \beta$) seam metal. The quantity of the alloying elements was verified by spectral analysis. The nitrogen, oxygen and hydrogen contents of the seams varied respectively between the following limits: 0.04-0.05%; 0.15-0.17% and 0.010-0.014%. The impact tests were effected on standard specimens with a notch located in the metal of the seam. The tensile tests were effected on circular specimens, which were machined from the seam metal, with a diameter of 3 mm in the part subjected to fracture. The specimens were cut from non-heat-treated weld joints and tested at room temperature. The phase composition of the seam alloys was verified by X-ray structural analysis. Information is given on the micro-structure of the alloyed seams and on the mechanical properties of the seam metal (graphs, Figs. 3-5).

Structure and Mechanical Properties of Welded Alloyed Joints of Titanium

On the basis of the obtained results, the author arrives at the following conclusions:
1. The strength of the seam is increased most by elements which stabilise the β-phase and these include manganese, iron and chromium. Elements stabilising the β-phase which form isomorphous β-phase systems (vanadium, molybdenum and also copper), have the lowest strengthening effect on the seam.
2. In the case of alloying the metal of the weld with up to 4-5% of elements which do not change its single-phase structure (aluminium and tin), the plasticity and the impact strength of the weld are maintained at an adequately high level. For elements stabilising the β-phase the optimum limit of alloying of the welds which are not subsequently heat treated should be reduced to 2-3%. From these elements the molybdenum and the copper reduce least the ductility and the impact strength of the titanium weld.
3. The ductility and impact strength after welding will be satisfactory for alloyed metal seams, the basic micro-

 structure of which consists of fine acicular α'-phase

Structure and Mechanical Properties of Welded Alloyed Joints of Titanium

(transformed into β-phase). The greatest reduction of the impact strength of a non-heat-treated two-phase alloyed seam was observed in the case of a β-phase matrix containing finely dispersed separations of the α-phase.
There are 6 figures and 9 references, 4 of which are Soviet, 5 English.

ASSOCIATION: Institut elektrosvarki AN Ukr.SSR imeni Ye. O.Patona (Institute of Electric Welding, Ac.Sc., Ukr.SSR, imeni Ye. O. Paton)

1. Titanium--Welding 2. Titanium alloys--Welding 3. Welded joints --Properties 4. Welds--Mechanical properties 5. Welds--Structural properties

GUREVICH, S.M.

125-1-2/15

AUTHOR: Gurevich, S.M.

TITLE: The Effect of Alloying Elements on the Structure and Mechanical Qualities of Weld Seams of Titanium (Vliyaniye legiruyushchikh elementov na strukturu i mekhanicheskiye svoystva svarnykh shvov titana)

PERIODICAL: Avtomaticheskaya Svarka, 1958, # 1, pp 14 - 21 (USSR)

ABSTRACT: The author refers to investigations made on the mechanical qualities and the micro-structure of flux welded seams of titanium containing not more than 7% of aluminum, tin, vanadium, chromium, molybdenum, manganese, iron and copper. The present article deals with the effect of various impurities, stabilizing the α and β-phase, and the structure and the mechanical qualities of welds of titanium made by fused electrodes under flux. The following elements for the alloying of weld seams were selected: aluminum, tin, vanadium, chromium, molybdenum, manganese, iron and copper. The investigation was concentrated on single titanium welds made under flux AH-T1. Technical titanium sheets ВТ-1Д, 3 mm thick, were butt welded. In order to obtain comparable results, basic metals of one smelting and the same smelting process were utilized for the welding of samples, i.e. welding current - 200 to 220 a, arc voltage - 30 to 32 v, welding rate - 50 m/hour. Mechanical quality tests were made

Card 1/3

The Effect of Alloying Elements on the Structure and Mechanical Qualities of Weld Seams of Titanium

on samples without a thermal treatment after welding and at room temperature. The phase composition of alloyed seams was controlled by micro-analysis and X-ray structure analysis (Cu-and Coradiation) on the basis of methods elaborated by B.A. Movchan. The results of investigations relating to the mechanical qualities of welded seams are given in the form of graphs. The author makes the following conclusions:

Alloying of titanium seams increases considerably their strength. Elements stabilizing the β-phase, such as manganese, iron and chromium, have a maximum strengthening effect on the welds. Copper and vanadium have minimal strengthening properties. The plasticity and strength of welds, without subsequent thermal treatment, remain rather high through the addition of elements in the seams in a quantity up to 4 - 5% and β-stabilizing elements up to 2-3%, which do not change its single phase structure (aluminum, tin). Molybdenum and copper have a minimum reducing effect on the plasticity and strength of titanium seams among elements stabilizing the β-phase. The maximum re-

The Effect of Alloying Elements on the Structure and Mechanical Qualities of Weld Seams of Titanium

duction of the toughness of bi-phase alloyed seams, not subject to thermal treatment is observed in the fine - dispersed separation of the α-phase from the β-phase matrix. Alloyed welds have a good plasticity and strength after welding if in the base of the micro-structure they possess a fine-acicular α-phase (a transformed β-phase).

There are 9 graphs and 8 photographs as well as 6 Russian and 5 English references.

ASSOCIATION: The Institute of Electrowelding imeni Ye.O. Paton (Institut elektrosvarki imeni Ye.O. Patona) of the Ukrainian SSR Academy of Sciences.

SUBMITTED: On 10 September, 1957.

AVAILABLE: Library of Congress

Card 3/3

AUTHORS: Grabin, V.F. and Gurevich, S.M. SOV-125-58-2-5/11

TITLE: Electronic-Microscopic Examination of Titanium Weld Joints (Elektronno-mikroskopicheskoye issledovaniye svarnykh shvov titana)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 2, pp 37-41 (USSR)

ABSTRACT: An "UEM-100" electronic microscope was used to examine the structure of argon-arc welded joints in commercially pure "VTI" titanium of 2 - 3 mm thickness welded with tungsten and fusing titanium electrodes under "AN-Ti" flux. The structure of seams is shown in electronic micro-photographs, and information is presented on the effect of impurities (such as nitrogen, oxygen, hydrogen and carbon), on the fine structure of the seam metal, revealed with the aid of the electronic microscope. There are 5 microphotos and 5 references, 2 of which are Soviet, 1 French and 2 English.

Card 1/2

GUREVICH S.M.

125-58-4-4/15

AUTHOR: Gurevich S.M., Candidate of Technical Sciences

TITLE: To the Question of the Weldability of Titanium Alloys Containing Copper (K voprosu o svarivayemosti titanovykh splavov, soderzhashchikh med')

PERIODICAL: Avtomaticheskaya Svarka, 1958, Nr 4, pp 32-36 (USSR)

ABSTRACT: Seven titanium alloys with an equal content of aluminum (5%) and a varying content of copper (between 0.45 and 4.7%) were experimentally studied to find the optimum concentration of copper producing maximum mechanical strength combined with good weldability of the alloy. The following was concluded. 1) In automatic welding under flux by unalloyed titanium wire, the copper content in base metal must not exceed 2%. 2) A higher than 2% concentration of copper in base metal causes the formation of large-needle martensite structure in the weld and in the metal adjacent to the weld, which reduces the plasticity and the toughness of welded joints. 3) Welds made on titanium alloys with about 5% Al and 2% Cu have a tensile strength of 85 kg/mm^2, an elongation limit of about 15%, and an impact resistance of 4 kg/cm^2.

Card 1/2

125-58-4-4/15

To the Question of the Weldability of Titanium Alloys Containing Copper

There are 4 photographs, 2 diagrams, and 7 references, 2 of which are Soviet, 3 English, and 2 German.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona AN UkrSSR (Electric Welding Institute imeni Ye.O. Paton of the AS UkrSSR)

SUBMITTED: January 30, 1958

AVAILABLE: Library of Congress

Card 2/2

Gurevich S. M.

125-58-6-4/...

AUTHORS: Yagupol'skaya, L.N., Langer, N.A., and Gurevich, ...
Candidates of Technical Sciences

TITLE: Corrosion Resistance of Titanium Welds in Hydrochloric, Sulfuric and Nitric Acids (Korrozionnaya stoykost' svarnykh shvov titana v solyanoy, sernoy i azotnoy kislotakh)

PERIODICAL: Avtomaticheskaya Svarka, 1958, Nr 6, pp 42-50 (USSR)

ABSTRACT: Butt welds of technically pure "VT1" titanium of 3.0 mm thickness, welded under "AN-T1" flux with 2.5 mm titanium electrode rods, were tested in water solutions of sulfuric, hydrochloric, and 60% and 99 % nitric acids. Tests in liquid and gaseous 99% HNO_3 were carried out with unloaded and with stressed specimens. Results are shown in tables and schematic drawings. The following conclusions are made: 1) titanium welds, tested under the aforementioned conditions, have the same corrosion resistance as the base metal; 2) commercial titanium and its weld joints are prone to corrosion cracks under tension in gaseous 99% HNO_3. There are 6 tables, 3 photos, 2 graphs, 2 figures, and 16 references, 8 of which are Soviet, 6 English, 1 French, and 1 German.

Card 1/2

125-58-6-4/24

Corrosion Resistance of Titanium Welds in Hydrochloric, Sulfuric and Nitric Acids

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut Elektrosvarki imeni Ye.O. Patona AN UkrSSR(Order of Labor "Red Banner" Institute of Electric Welding im. Ye. O. Paton, AS UkrSSR)

SUBMITTED: February 21, 1958.

AVAILABLE: Library of Congress

Card 2/2 1. Titanium-Welding 2. Welds-Corrosion resistance 3. Acids-Applications

AUTHORS: Gurevich, S.M., and Grabin, V.F. SOV-125-58-9-5/14

TITLE: Metallographic Investigation of Weld Joints in Zirconium (Metallograficheskoye issledovaniye svarnykh shvov tsirkoniya)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 9, pp 33-36 (USSR)

ABSTRACT: As existing methods of polishing weld joints in zirconium do not comply with given requirements, the Institute of Electric Welding developed a new method of preparing micro-sections of zirconium weld joints by machining, combined with subsequent electrolytic polishing. The new method produces smooth surfaces and a clear picture of the structure, for investigations on optical and electronic microscopes. There are 3 sets of microphotos and 7 references, 2 of which are Soviet and 5 English.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona AN USSR (Institute of Electric Welding imeni Ye.O. Paton, AS UkrSSR)

SUBMITTED: June 5, 1958

1. Zirconium--Welding 2. Welded joints--Applications
3. Welded joints--Structural analysis

Card 1/1

SOV-125-58-10-1/12

AUTHOR: Gurevich, S.M.

TITLE: Weld Metal in the Electric-Arc Welding of Titanium Alloys (Metall shva pri elektrodugovoy svarke titanovykh splavov)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 10, pp 3 - 13 (USSR)

ABSTRACT: Information is presented on the mechanical properties and micro-structure of weld joints in single-and two-phase titanium alloys, welded with different electrodes. The information includes recommendations on the welding method and the choice of electrodes which are based on data in existing literature. It is stated that for welding titanium alloys of medium thickness (over 2.5 - 3 mm), automatic welding under flux can be recommended. Alloy work over 30 - 40 mm thickness should be welded by the electric-slag method. In the electric-arc welding of titanium single-phase α-alloys with a yield limit up to 90 kg/mm^2, electrodes of unalloyed commercially pure titanium are recommended. The same electrode type can be used for welding low-alloyed titanium alloys containing up to 2 - 3% β-stabilizing elements. Heat treatment at temperatures of 650 to 850°C does not change the mechanical properties of joints in commercial titanium and

Card 1/2

Weld Metal in the Electric-Arc Welding of Titanium Alloys

single-phase α -alloys. To ensure necessary strength of the weld joint, it is suggested to use alloyed electrodes of a composition different from the base metal for welding medium-alloyed two-phase titanium alloys. Good results were obtained in welding with α-alloy fusing electrodes (the "VT5-1" type). There are 5 tables, 4 sets of microphotos, 1 graph and 20 references, 11 of which are Soviet, 8 English and 1 German.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona (Institute of Electric Welding imeni Ye.O. Paton)

SUBMITTED: July 15, 1958

1. Titanium--Welding 2. Welds--Mechanical properties 3. Welds --Microstructure 4. Arc welding--Electrodes

GUREVICH, S.M.

Effect of aluminum on the structure and properties of titanium weld joints. Titan i ego splavy no. 1:205-208 '58. (MIRA 14:5)

1. Institut elektrosvarki AN USSR.
(Titanium--Welding) (Aluminum)

GUREVICH, S.M.

PHASE I BOOK EXPLOITATION SOV/3364

Rabkin, Daniil Markovich, Samuil Markovich Gurevich, and Filipp Semenovich Burgiy

Svarka tsvetnykh metallov (Welding of Nonferrous Metals) Moscow, Mashgiz, 1959. 69 p. (Series: Biblioteka svarshchika) 15,000 copies printed.

Ed.: V. K. Serdyuk, Engineer; Ed. of this Vol.: A. Ye. Asnis, Candidate of Technical Sciences; Editorial Board: A. Ye. Asnis, A. A. Kazimirov, B. I. Medovar, B. Ye. Paton (Resp. Ed.); and V. V. Podgayetskiy; Chief Ed. (Southern Division, Mashgiz): V. K. Serdyuk, Engineer.

PURPOSE: This book is intended for welders.

COVERAGE: The authors present basic information on various methods of welding aluminum, magnesium, titanium, zirconium, nickel, molybdenum, lead, and various alloys of these metals. They describe manual welding of these metals, and automatic welding and its applications. They also provide instructions on the selection of proper welding regimes and the use of required equipment, the preheating of metal, and heat treatment. Experience of the Kiyev "Bol'-shevik" Plant, the Sumy Plant imeni Frunze, and the Ural Railroad-Car Plant is described. No personalities are mentioned. There are 11 references, all

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Welding of Nonferrous Metals

Soviet.

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25(1) PHASE I BOOK EXPLOITATION SOV/3421

Akademiya nauk URSR, Kiyev, Institut elektrosvarki imeni akademika Ye.O. Patona

Vnedreniye novykh sposobov svarki v promyshlennost', vyp. 2 (Introduction of New Welding Methods in Industry; Collection of Articles, No. 2) Kiyev, Gos. izd-vo tekhn. lit-ry Ukrainskoy SSR, 1959. 194 p. Errata slip inserted. 3,000 copies printed.

Ed.: V. Garkusha; Tech. Ed.: S. Matusevich.

PURPOSE: This book is intended for workers in the welding industry.

COVERAGE: The book contains a discussion of welding techniques and problems by groups of scientists and welders. Much attention is given to problems in the application of new methods of mechanized welding and electro-slag welding. This is the second collection of articles under the same title prepared and published by the Institut elektrosvarki imeni Ye.O. Patona (Institute of Electric Welding imeni Ye.O. Paton). The preface is written by B.Ye. Paton, Academician of the Ukrainian Academy of Sciences and Winner of the Lenin Prize. There are no references.

Iakra, A. S. [Engineer], Yu. A. Sterenbogen [Candidate of Technical Sciences], V. M. Khrundzhe [Engineer; Institut elektrosvarki imeni Ye.O. Patona (Electric Welding Institute imeni Ye.O. Paton)], D. P. Antonets [Engineer, Zhdanovskiy zavod imeni Il'icha (Plant imeni Il'ich in Zhdanov)], V. I. Rabinovich [Engineer; Barnaul'skiy kotel'nyy zavod (Barnaul Boiler Plant)], and V. V. Chernykh [Engineer; Novo-Kramatorskiy mashinostroitel'nyy zavod (New Kramatorsk Machinery Plant)]. Electro-slag Welding of Steel-plate Constructions 17

Iakra, A. S. [Senior Engineer], A. M. Makara [Candidate of Technical Sciences], and L. V. Novikov [Senior Engineer; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)]. Making Bodies for Chemical Equipment by Electro-slag Welding of Medium-alloyed Steel Forgings 32

Medovar, B. I. [Candidate of Technical Sciences], A. N. Safonnikov [Engineer; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)], and I. N. Gerasimenko [Head of Welding Department; Podol'skiy mashinostroitel'nyy zavod imeni S. O. Ordzhonikidze (Podol'sk Machinery Plant imeni S. O. Ordzhonikidze)]. Electro-slag Welding of Large Flanges of 1Kh18N9T Austenitic Steel 51

Gurevich, S. M. [Candidate of Technical Sciences], V. E. Didkovskiy [Engineer; S. D. Zagrebenyuk [Engineer; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)], P. S. Sinel'skiy [Head of Welding Office], and V. P. Shayrey [Technologist of a welding shop]. Electro-slag Automatic Arc Welding of Medium and Large Thickness of Titanium 64

Pokhodnya, I. K. [Candidate of Technical Sciences], V. P. Subbotovskiy [Senior Engineer], L. L. Frumin [Candidate of Technical Sciences; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)], L. A. Volkova [Shop Foreman; Dnepropetrovskiy metallurgicheskiy zavod imeni G. I. Petrovskogo (Dnepropetrovsk Metallurgical Plant imeni G. I. Petrovskiy)], V. P. Gorelov [Shop Superintendent; Alchevskiy metallurgicheskiy zavod imeni K. Ye. Voroshilova (Alchevsk Metallurgical Plant imeni K. Ye. Voroshilov)], and N. A. Ryzhenko [Chief Mechanic, Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine)]. Introduction of Automatic Hard-surfacing in the Metallurgical Industry 74

Lashkevich, B. L. [Candidate of Technical Sciences], S. L. Mandel'berg [Candidate of Technical Sciences; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institut imeni Ye. O. Paton)] Z. O. Ryazhinskiy [Candidate of Technical Sciences; Ukrainskiy nauchno-issledovatel'skiy trubnyy institut (Ukrainian Scientific and Research Institute of Pipes)], and S. A. Prikhe [Chief Engineer; Chelyabinskiy trubo-prokatnyy zavod (Chelyabinsk Pipe-rolling Plant)]. New Technique in Straight-seam Welding of Large-diameter Oil and Gas Pipes 95

Gorbunov, G. V. [Engineer; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)]. F. A. Zasko, [Chief Engineer; Svarochno-montazhnyy trest (Welding and Assembling Trust)], and A. N. Yurvanev [Chief of the Department of Gas Pipeline Construction; Glavgaz SSSR (Main Administration of the Gas Industry of the USSR)]. Mechanized Methods of Welding in Pipeline Construction 108

Rayevskiy, G. V. [Candidate of Technical Sciences, Winner of Lenin Prize; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)], V. Ya. Marezkiy [Chief Engineer; Ukrglavneftesbyt (Ukrainian Main Administration for Petroleum Marketing)], and Ye. F. Martinova [Head of Construction and Assembly Administration No. 70; Trest 7, Ministerstvo stroitel'stva RSFSR (RSFSR Ministry of Construction, Trust 7)]. Introd.... of the Method for Weldments in the Petroleum Industi. 11?

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25(1,7)
AUTHORS: Movchan, B.A., Rabkin, D.M., Gurevich, S.M., and Zagrebenyuk, S.D.

TITLE: Some Technological Features of Electron Beam Welding in a Vacuum

PERIODICAL: Avtomaticheskaya svarka, 1959, Nr 8, pp 12-17 (USSR)

ABSTRACT: This article describes an apparatus for electron beam welding in a vacuum developed at the Institut elektrosvarki imeni Ye.O. Patona (Institute of Electric Welding imeni Ye.O. Paton), and work done to determine the relation between parameters of the welding process and characteristics of the melt obtained. The authors first describe the IES-L1 laboratory device for electron beam welding in a vacuum, consisting of: 1) a vacuum chamber with rotating table and an external drive; 2) a vacuum system using a VN-461M lamellate-stator pump, a high-vacuum steam-oil pump TsVL-100, and type VIT-1 vacuum gauge; 3) electrical equipment consisting of step-up and filament transformers from a GKT-250 X-ray apparatus, a KRM-150 kenotron, LATR

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autotransformers, and control and measuring equipment. Construction and outfitting of the vacuum chamber is described in some detail. The half-wave kenotron rectifier is rated at a consumed power of up tp 1 kw. Voltage during welding can be varied in limits up to 10-15 kV; this range is below that at which X-ray radiation becomes a problem. Welding current up to 150 ma is available. Vacuum is no less than 2×10^{-4} mm of Hg. In the experimental chamber circular, junction, and over-lapping seams can be made. Welding speed is smoothly regulated from 2-28 m/hr. During experiments to determine the influence of the parameters of the process of electron beam welding in a vacuum on the melting of the basic metal, the relation between the depth and width of the weld and the amount of electron current, anode voltage (that between the cathode and welded object), welding speed and position of the cathode in relation to the plates being welded was studied. The basic metal used in the experiments was industrial titanium VT1. Fusing was

performed on a plate 5-6 mm thick under various welding conditions. Basic parameters of the process are given. Computation of the required degree of rarefaction in the chamber is outlined. A higher than usual vacuum - 2 x 10^{-4} mm of Hg - was used in these experiments to assure quality results. It is stated that at pressures higher than 3 x 10^{-3} mm of Hg the electronic process can easily become an ionic one. Results of the experiment are illustrated (Figs 5-8) and briefly outlined. It was established that an increase in current causes a noticeable increase in the depth and width of the weld. Voltage also has a significant influence on the melt of the basic metal. In contrast to electric arc welding, a voltage increase substantially increases the depth of the weld. The width and depth of the melt can also be controlled by varying the welding speed.

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Some Technological Features of Electron Beam Welding in a Vacuum

There are 1 photograph, 1 schematic diagram, 2 structural diagrams, 4 graphs and 3 references, 1 of which is Soviet and 2 English.

ASSOCIATION: Ordena trudovogo krasnogo znameni - Institut elektrosvarki imeni Ye.O. Patona (Order of the Red Banner of Labor - Institute of Electric Welding imeni Ye.O. Paton) AN USSR (AS Ukr SSR)

SUBMITTED: May 14, 1959

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18(2,3,7)
AUTHOR: Gurevich, S.M., Candidate of Technical Sciences, and Yagupol'skaya, L.N., Candidate of Chemical Sciences

TITLE: The Mechanical Properties and Corrosion Resistance in Nitric Acid of Welded Joints of Certain Titanic Alloys

PERIODICAL: Avtomaticheskaya svarka, 1959, Nr 10, pp 19-30 (USSR)

ABSTRACT: The purpose of the tests described in the article was to determine the mechanical properties and corrosion resistance of welded joints made from titanic alloys of types VT3-1, VT4, OT4 (two-phase), VT5 and VT5-1 (single phase), which are new in general use [Refs 1 and 2]. In an experiment to compare the corrosion resistance of the alloys and their welded joints, sheet metal 3-3.5mm thick was taken and tests were conducted on butt-joints by means of various alloys and electrode wire 2.5mm in diameter; the welding process was as follows: I_{sv} = 200-250 amps, U_d = 30-32 volts, V_{sv} = 50 m/hour. Table 1 illustrates the data concerning the chemical composition and mechanical properties of the alloys tested. It was found that the metal of the seam welded with the alloy VT3-1 was the most durable at a normal temperature and softened

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The Mechanical Properties and Corrosion Resistance in Nitric Acid of Welded Joints of Certain Titanic Alloys

least at high temperatures (Fig 2), while joints made with the alloys VT5-1 and OT4 were of the maximum elasticity (Table 2). Graphs of the mechanical properties of the metal of the seams under various temperatures are given in Fig 1. The toughness of the alloys (given in Fig 2) was found to be virtually invariable at a normal temperature, but at low temperatures (-70° C) that of the alloys VT5 and VT5-1 decreased (to 2.3-2.5 kilogrammeter/cm^2) more than in the case of the alloys OT4 and VT4 (4 kilogrammeter/cm^2). Table 3 contains the results of tests on the mechanical properties of welded butt-joints carried out on 10mm thick metal by means of Type VT-1 titanic wire 3mm in diameter, with flux Type AN-T1; it can hence be seen that the tendency of single-phase seams to friability is due to their greater sensitivity to hydrogen. It is stated that the resistance to friability of titanic seams may be raised by the addition of molybdenum [Ref 5]. Fig 4 shows microstructures of 2 seams, one single-phase alloy Type VT5-1 and the other two-phase alloy

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